

Broadcast Cassette VTR



Features

- Dynamic Tracking — Jog and Shuttle Modes
- Broadcast Playback -1 ↔ +3 Play
- Video Confidence — Record Monitor
- All DC Motors, Direct-Drive Transport
- Tape Threaded in all Operational Modes
- Front Load Cassette
- Full Function Editing with Micro-processor Control
- Two-Channel Audio Mixing
- Integrated, Plug-Compatible Product Line



BVU-820

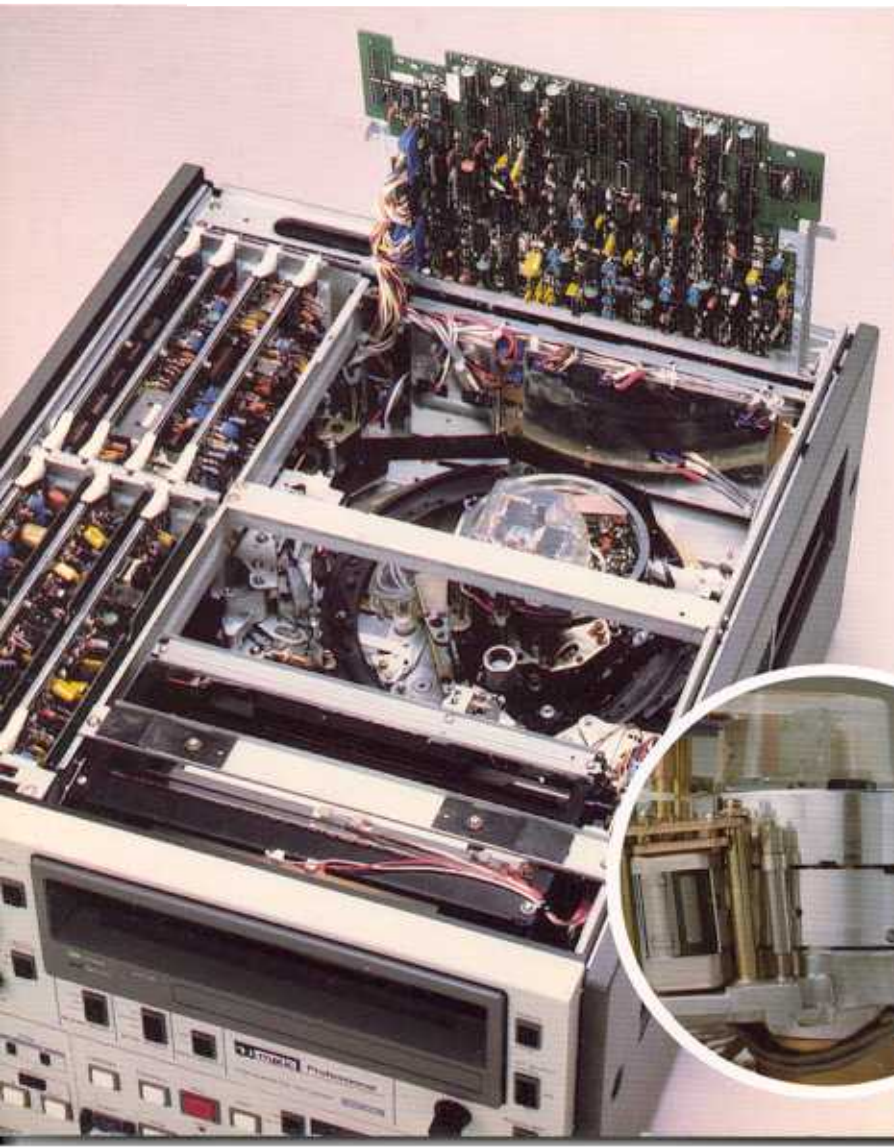
The BVU-820 is the latest VTR in the Sony BVU-800 series broadcast U-Matics. Combining the performance and versatility of the BVU-800 with a new Dynamic Tracking (DT) mode enables the BVU-820 to provide the production flexibility previously associated only with C-Format VTRs, but with the operational ease of cassette loading. Variable play speeds from -1 to +3 times standard speed and a single control 'Jog' mode provides a wide range of special functions. Variable event sequences can now become part of a U-Matic master without the aid of other VTRs or peripheral storage devices.

The full function editing capabilities of the 800 series are retained in the BVU-820. An optional plug-in SMPTE Time Code Generator/Reader module removes the need for external data sources. Front panel selection of edit mode, including timed audio split edits, together with edit preview and variable preroll modes, makes editing fast, accurate and virtually error free. The BVU-820

also provides control over a second BVU-800 or 820, using the control assignment function. Complete operational control, with mode select indication and time code readout, is provided at the local control panel. If required, this variable position panel can be removed from the VTR and separated by up to 30 feet, still retaining all system control functions.

An integral CPU maintains logic and control discipline as well as performing

internal diagnostic routines. Many possible sources of error are thus eliminated, and incorporation of the BVU-820 into automatic editing systems is greatly simplified. Both 9-pin RS-422 serial and 36-pin parallel control ports are provided, making the BVU-820 plug compatible with a wide range of control systems and devices. The BVR-820 Remote Control panel can be separated from the VTR by over half a mile and, as well as all remote control functions, also provides Cue and Stunt-to-Cue selection with up to 4 cue points. Requiring only front access, the rack mountable BVU-820 is easily added to new or existing installations.



Tape Transport with Dynamic Tracking

The BVU-820 tape transport is almost identical to that used in the proven BVU-800. Employing a precision diecast mainframe with high torque DC motors in a direct drive configuration, the transport combines precise high speed tape handling characteristics with the convenience of a plug-in, front-load cassette. Tape remains in a threaded position during all operational modes. The servo system provides exact control of tape motion for normal play/record and fast, accurate access for the editing modes. For DT operation, added tape tension techniques ensure stable, positive control in the still frame mode and in sudden forward/reverse direction changes. In these situations, tape tension is maintained automatically for approximately two seconds after a still frame set or a direction reversal.

Signal System

The high performance signal system of the BVU-820, typical of the 800 series, achieves a level of control, quality, and flexibility not previously available in broadcast cassette VTRs. Primarily, through improved RF preamplification, a flat, frequency response is achieved with attendant improvement in signal-to-noise ratio and phase characteristics of the demodulated signal. A wider pull-in range for the automatic phase control circuit allows for viewable color pictures at tape speeds up to ten times normal (40 times for monochrome) in both forward and reverse shuttle modes.

For Dynamic Tracking, an automatic color control circuit ensures broadcast standard video signals over the wide DT speed range. Also featured in the BVU-820 is the video confidence function providing simultaneous playback to a monitor when recording. A newly designed high frequency (1.8 MHz) rotary erase circuit minimizes interference between record and DT head playback.

The audio signal system has a mixer for channels 1 and 2 allowing separate or mixed audio record. Individual record and playback level controls for each channel are provided on the front panel. Low impedance audio outputs and a monitor output are switch-selectable as separate or mixed outputs at the rear panel.

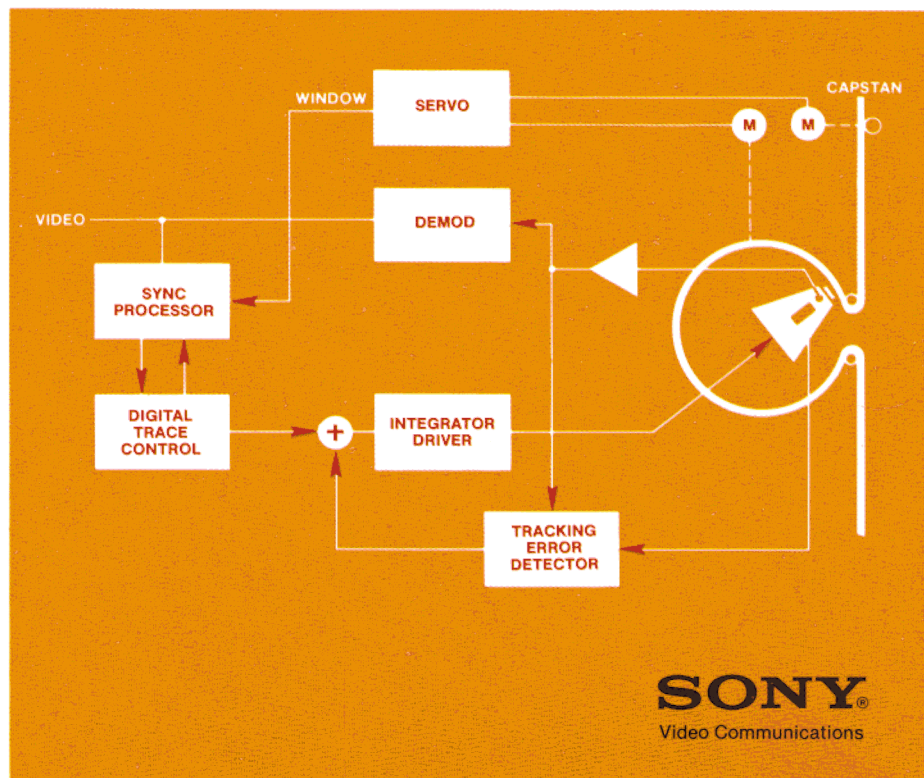
Edit Control System

Flexible and efficient editing derive from the microprocessor controller, Bidirex Search and Jog modes with Dynamic Tracking, built-in edit controller, and audio mixing capability. Video and audio 1 and 2 insert and assemble selection are possible with the ability to rehearse, implement, and review in manual or auto-edit modes. Field by field forward or reverse trim, selectable preroll time and auto-edit entry in and out enable precisely timed edits without additional control units. With tape under constant servo control, high speed search and forward/reverse Jog modes allow for fast and accurate audio and video editing.

With a peripheral Digital Timebase Corrector, (such as the BVT-800 or BVT-2000), the Jog mode and Dynamic Tracking provide broadcast stop motion or forward and reverse stepping under exact operator control. Effects such as frame slow, still, or fast are possible since the tape moves precisely at the same speed and direction as the Bidirex Control is rotated. A still frame results with the Control stationary. If the DT switch is in variable (VAR) position, tape speed is limited to the Dynamic Tracking range of -1 to +3 times normal when using the Jog or Shuttle mode. In the Search position of the DT switch, Dynamic Tracking is automatically disabled at shuttle speeds beyond the -1 to +3 range, but viewable color pictures to 10 times play speed (monochrome pictures to 40 times) are provided.



Although new to the U-Matic format VTR, the Dynamic Tracking function is based on the proven designs used in Sony BVH-1100/2000 series C format VTRs. A second, specially designed head is located in the scanner along with the normal R/P head. The DT head mounts on a bimorph crystal carrier forming a flexible holder that can be moved laterally. Head movement is controlled by a high-speed digital trace control circuit. The trace control circuit continuously monitors playback sync frequency and phase, digitally processes the data, and arithmetically derives the control signals for track switching and slope correction. The control signals drive the DT head crystal mount causing a high frequency lateral head movement to maintain precise tracking in forward and reverse motion. The rate of control and fast head response enable the DT system to provide broadcast video over a wide variable speed range.



Specifications

General

Power Requirements: AC 100/120/220/240 V \pm 10%, 48 - 64 Hz
Power Consumption: 150 W maximum
Operating Temperature: 41° to 104°F (5° to 40°C)
Humidity: 10% to 90% non-condensing
Weight: 83.3 lb (38 kg)
Dimensions: 17.8 x 11.2 x 21.7 in WHD (454 x 283 x 550 mm)
Tape Speed: 3.75 in/sec (9.53 cm/sec)
Record Time: 60 minutes
Fast Forward Time: Less than 4 minutes
Rewind Time: Less than 2.5 minutes

} with KCA-60 Cassette

Video

Video Recording System: Luminance: FM
 Chroma: SC low-range conversion
Input Signal: NTSC composite, negative sync;
 1.0 Vpk-pk \pm 3 dB, 75 ohms, unbalanced
Dubbing Input: Luminance 1.7 Vpk-pk
 Chroma 0.9 Vpk-pk
Dubbing Output: Luminance 1.7 Vpk-pk
 Chroma 0.9 Vpk-pk
Signal-to-Noise Ratio: Better than 49 dB (monochrome)
 Better than 47 dB (color)
Horizontal Resolution: 340 lines (monochrome)
 260 lines (color)
Subcarrier Input: 2.0 Vpk-pk \pm 1.0 V, 75 ohms unbalanced
Sync Input: 0.2 Vpk-pk to 5.0 Vpk-pk, negative, 75 ohms unbalanced
 (1.0 Vpk-pk \pm 0.2 V with Video Input)

Audio

Input: (MIC) -60 dB, 3k ohms, balanced
 (matches 600-ohm microphone)
 (LINE) +4 dB, 600 ohms/10 kohms (switchable),
 balanced
Output: (LINE) +4 dB, low impedance, balanced
 (MONITOR) +4 dB, low impedance, balanced
 (HEADPHONE) -46 to -26 dB, 8 ohms Binaural
Distortion: Less than 2.0% (1 kHz reference level)
Frequency Response: 50 Hz to 15 kHz
Signal-to-Noise Ratio: 48 dB (at 3% distortion level)
Input (TIME CODE): 0 dB \pm 6 dB, 10 kohms, unbalanced
Output (TIME CODE): 0 dB \pm 3 dB, low impedance, unbalanced

Controls

Normal Functions: Eject, Fast Forward, Play, Record, Stop, Rewind,
 P/B, E/E, Dynamic Tracking (DT), Skew
Bidirex: Jog Mode: Still to forward and reverse speeds equal to
 manual rotation of Bidirex control
 Shuttle Mode: 8 speeds in forward or reverse of 1/30, 1/10,
 1/5, 1/2, 1, 2, 5, and 10 times normal
 DT Mode: In Jog or Shuttle mode, the DT switch
 functions are:
 OFF — DT head is off for playback
 VAR — Tape speeds are limited at -1 to +3
 times normal play speed; DT head
 is enabled continuously
 SEARCH — Full shuttle speeds (forward and
 reverse) are possible, but DT head
 is automatically disabled at speeds
 beyond -1 to +3 times normal
Edit Mode Select: Assemble, Insert-Video, Auto Edit, Stand-by, Preroll,
 Audio-1, Audio-2, Edit, Preview, Review, Entry In/Out
 and Trim +/-
VTR Control Select: Remote/Local, Play VTR, Record VTR

Meters/Switches:

Video Level: Auto/manual select level
Audio Level: Limiter on/off, Channel 1 and 2-input/output level
Mic/Line Level: 600 ohm input termination ON/OFF
Audio Monitor: CH1/MIX/CH2
Audio Mixer: To Channel 1, OFF, To Channel 2
Input Select: Line/Dub
Mode Select: TBC/Normal/Edit

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